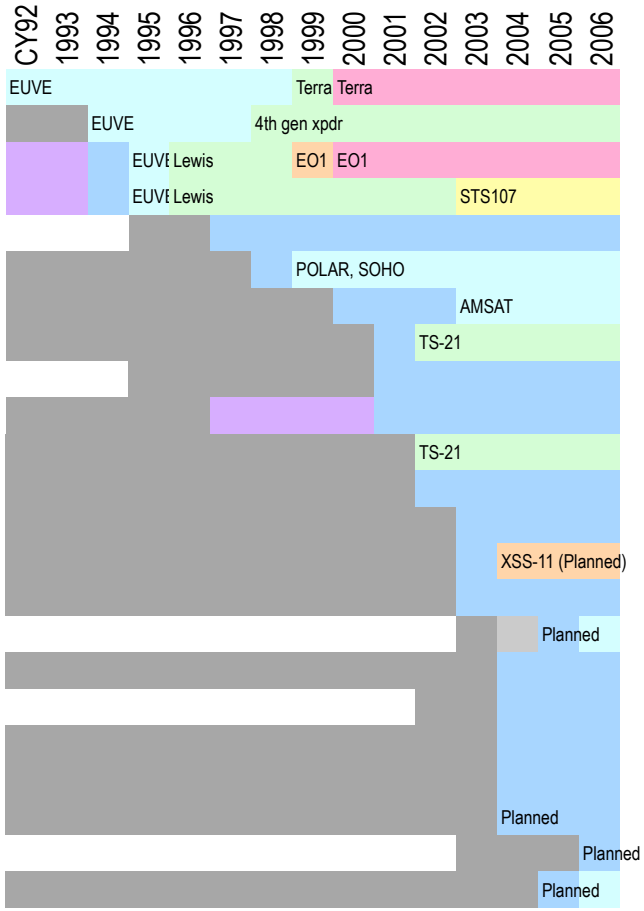
Navigation Capabilities in GEONS

- One-way fwd link SN Doppler
- One-way fwd link GN Doppler
- Filtered GPS Pt Solns, single user in LEO
- GPS L1 PR & Doppler, single user in LEO
- GPS WAAS, single user in LEO
- Line-of-sight celnav, single user any orbit
- GPS L1 PR & Doppler, single user in HEO & GEO
- GPS L1 PR & Doppler, mult user, any EO
- GPS WAAS, multi user any EO
- Crosslink range & Doppler, mult user any orbit
- GPS L1 carrier phase, mult users any EO
- Pseudo-angle celnav, multi user, any orbit
- Lambert targeting
- Reduced code size, GPS pt soln, single user in LEO
- GPS attitude determination, single user in LEO
- GPS L2, L5 all data types, mult user, any EO
- Improved crosslink bias modeling
- Improved ionophere model
- FDIR state selection
- GPS attitude determination, mult user, any EO
- High-order lunar gravity
- Navigation of large dense satellite clusters
- Continuous low thrust maneuvers



TRL Key

1. Basic principles reported
2. Concept formulated (math spec)
3. Concept proven (beta s/w)
4. Cmpnt (algrthm) val in lab env (accpt tested)
5. Cmpnt (algrthm) val in relv env (t/b, flt data)
6. Sys (algrthm in "box") val in relv env
7. Prototype sys flt demo in space
8. Flight qualified (act sys demo, gnd/space)
9. Flight proven (act sys proven in ops)